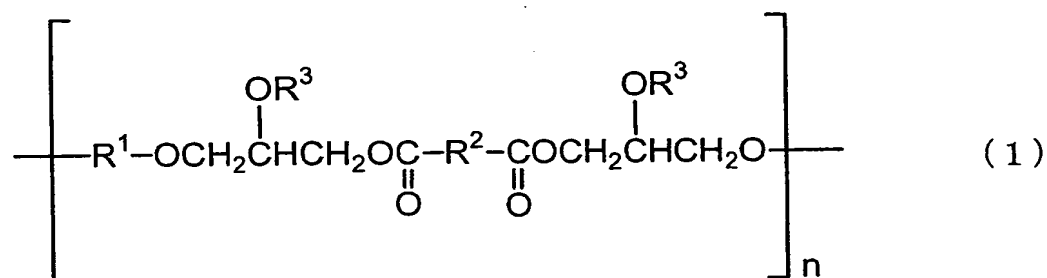


# CLAIMS

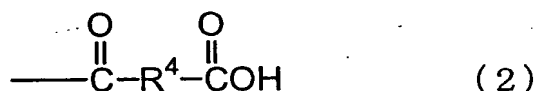
1. A modified epoxy resin containing a repeating unit represented by the following general formula (1):

[Chemical Formula 1]



[wherein R<sup>1</sup> represents a divalent organic group which is a diglycidyl ether-type epoxy compound residue, R<sup>2</sup> represents a divalent organic group which is a dibasic acid residue, R<sup>3</sup> represents a hydrogen atom or a group represented by the following general formula (2):

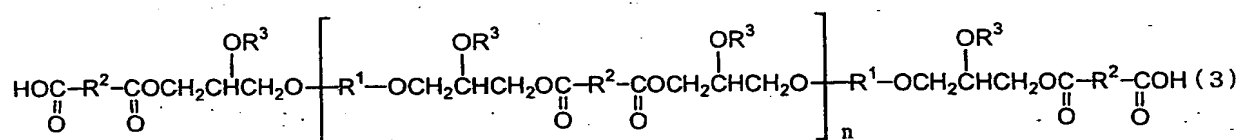
[Chemical Formula 2]



(wherein R<sup>4</sup> represents an acid anhydride residue),  
and n represents an integer of 1 or greater].

2. A modified epoxy resin represented by the following general formula (3):

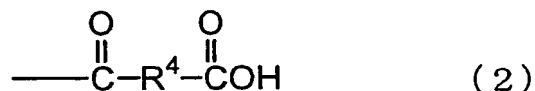
[Chemical Formula 3]



[wherein R<sup>1</sup> represents a divalent organic group which is a diglycidyl ether-type epoxy compound residue, R<sup>2</sup> represents a divalent organic

group which is a dibasic acid residue,  $R^3$  represents a hydrogen atom or a group represented by the following general formula (2):

[Chemical Formula 4]



5 (wherein  $R^4$  represents an acid anhydride residue),  
and  $n$  represents an integer of 1 or greater].

3. A modified epoxy resin obtained by a production process for a modified epoxy resin which comprises

10 a first step of obtaining an intermediate product by  
polymerization reaction between a diglycidyl ether-type epoxy  
compound and a dibasic acid, and

a second step of adding an acid anhydride to said intermediate product.

15 4. A modified epoxy resin according to claim 1 or 3, wherein  
said dibasic acid is a dicarboxylic acid,

and has a linear structure due to ester bonds produced by reaction between carboxyl groups and glycidyl groups in the molecule.

20 5. A modified epoxy resin according to claim 1 or 3, which has  
at least one carboxyl group, and has a weight-average molecular weight  
of 10,000-70,000.

6. A modified epoxy resin according to any one of claims 1 to 4,  
which has a weight-average molecular weight of 10,000-70,000.

7. A modified epoxy resin according to any one of claims 1 to 6,  
which has an acid value of 70-200 mgKOH/g.

25 8. A production process for a modified epoxy resin which

comprises

a first step of obtaining an intermediate product by polymerization reaction between a diglycidyl ether-type epoxy compound and a dibasic acid, and

5 a second step of adding an acid anhydride to said intermediate product to obtain a modified epoxy resin.

9. A production process for a modified epoxy resin according to claim 8, wherein a dicarboxylic acid is used as said dibasic acid.

10 10. A production process for a modified epoxy resin according to claim 8 or 9, wherein said polymerization reaction in said first step is carried out using a tertiary amine with a pKa of no greater than 9.0 as the catalyst.

15 11. A photosensitive resin composition comprising (A) a modified epoxy resin according to any one of claims 1 to 7, (B) a photopolymerizable compound having at least one ethylenic unsaturated group in the molecule, and (C) a photopolymerization initiator.

20 12. A photosensitive resin composition according to claim 11, which further comprises (D) a resin with an unsaturated group, obtained by polymerization of

(a) a resin obtained by copolymerization of a (meth)acrylic acid ester monomer and a monomer with a prescribed functional group (I), and

25 (b) a compound with a prescribed functional group (II) and an unsaturated group, by reaction between said functional group (I) and said functional group

(II).

13. A photosensitive resin composition according to claim 12, wherein said functional group (I) is at least one selected from the group consisting of hydroxyl, carboxyl, epoxy and isocyanate.

5           14. A photosensitive resin composition according to claim 12, wherein the monomer containing said functional group (I) is at least one selected from the group consisting of 2-hydroxyethyl (meth)acrylate, 2-hydroxypropyl (meth)acrylate, 4-hydroxybutyl (meth)acrylate, phenylglycidylether (meth)acrylate, (meth)acrylic acid, itaconic acid,  $\beta$ -(meth)acryloyloxyethylhydrogen succinate, glycidyl (meth)acrylate, (meth)allylglycidyl ether, vinyl isocyanate, (meth)acryl isocyanate and 2-(meth)acryloyloxyethyl isocyanate.

10           15. A photosensitive resin composition according to any one of claims 12 to 14, wherein said functional group (II) is at least one selected from the group consisting of aldehyde, hydroxyl, ethyleneimino, carboxyl, epoxy and isocyanate.

15           16. A photosensitive resin composition according to any one of claims 12 to 15, wherein the unsaturated group of said (b) compound with a prescribed functional group (II) and an unsaturated group is at least one selected from the group consisting of vinyl, isopropenyl, (meth)allyl and (meth)acryloyl.

20           17. A photosensitive resin composition according to any one of claims 12 to 16, wherein the combination of said functional group (I) and said functional group (II) is a combination selected from the group consisting of hydroxyl and isocyanate, hydroxyl and epoxy, hydroxyl and aldehyde, hydroxyl and carboxyl, hydroxyl and ethyleneimino,

carboxyl and epoxy, carboxyl and hydroxyl, isocyanate and hydroxyl, and epoxy and carboxyl.

5 18. A photosensitive resin composition according to any one of claims 12 to 17, wherein the glass transition temperature of the (D) resin with an unsaturated group is -10 to 60°C, the weight-average molecular weight is 10,000-200,000 and the acid value is 50-150 mgKOH/g.

10 19. A photosensitive resin composition according to any one of claims 11 to 18, wherein said component (A) is a modified epoxy resin according to claim 2.

20. A photosensitive resin composition according to any one of claims 11 to 19, which is used to form a flexible cured resin on a film-like base.

15 21. A photosensitive resin composition according to any one of claims 11 to 20, which is used to form a permanent mask for a flexible printed circuit board.

20 22. A photosensitive element comprising a support and a photosensitive resin composition layer composed of a photosensitive resin composition according to any one of claims 11 to 21 formed on said support.